DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION

WORKING PAPER

PATTERNS OF LIVESTOCK OWNERSHIP
AND DISTRIBUTION IN ZIMBABWE'S
COMMUNAL AREAS

BY

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CONTENTS

INTRODUCTION

Livestock make an important contribution to Zimbabwe's agricultural sector (Table 1), and this contribution is likely to grow in the future. Continuing increases in both population and personal disposable income mean a growing domestic demand for livestock products; and preferential access to the EEC beef export market make livestock a potentially valuable source of overseas exchange (foreign exchange earnings from cattle amounted to Z $66.6 m in 1988; AMA, 1991).

Table 1. Value of Agricultural Sales Zimbabwe 1988

Crops	Cattle	Dairy	Pigs	Sheep	Total
		Z $m			
1367.4	228.9	113.2	23.7	1.7	1734.9
		Percent			
79	13	6	1	-	100

SOURCE: CSO Quarterly Digest of Statistics, Dec 1989

Communal farmers are the major owners of livestock in Zimbabwe. In 1988 they owned 68% of all cattle, 99% of all goats, 84% of all sheep, and 60% of all pigs. Moreover, this dominance of national livestock holdings is growing, notably in the beef sector where communal farmers have increased their share of the national beef herd from 55% in 1980 to 68% in 1988 (CSO, 1989). These trends in ownership have two major implications for agricultural policy.

The immediate effect is a growing shortage of beef for domestic consumption, due to the much lower off-take rates in the communal sector (1%-3%) as opposed to the commercial sector (18%-23%)[1]. Prime determinants of this low off-take rate include an average herd size of 7.1 cattle (MLARR), and the fact that communal farmers value cattle for their contribution to crop production (through draft and manure) rather than as a direct source of cash income (Cousins, 1989). This latter conflict between household needs for food security and national requirements for meat production poses a major dilemma for policy-makers.

[1] Apparent domestic consumption of beef and veal (excluding communal areas) has declined from 86869 mt in 1981 to 62510 mt in 1990 (AMA).

The sustained increase in livestock numbers in the communal areas also poses a more general and serious set of problems. Using standard conversions for livestock units, figure 1 below shows that the total mass of livestock supported by the communal areas increased by 54% during the period from 1970 to 1988. Consequent overgrazing has contributed to growing environmental deterioration. This has significantly impaired the capacity of the communal areas to provide enough food for a rapidly growing human and animal population.

In this paper we review key aspects of these aggregate trends, and then present a detailed breakdown of current patterns of communal livestock ownership. While the initial review draws on secondary sources, the subsequent analysis is based on new data from a national livestock survey of 1620 farmers conducted by the Central Statistical Office in 1988-89. To ensure the widest use of these CSO data by policy-makers, administrators and academics, the results are disaggregated by geographical and administrative boundaries and presented in a comprehensive set of appendices at the end of the paper.

REGIONAL DISTRIBUTION of LIVESTOCK

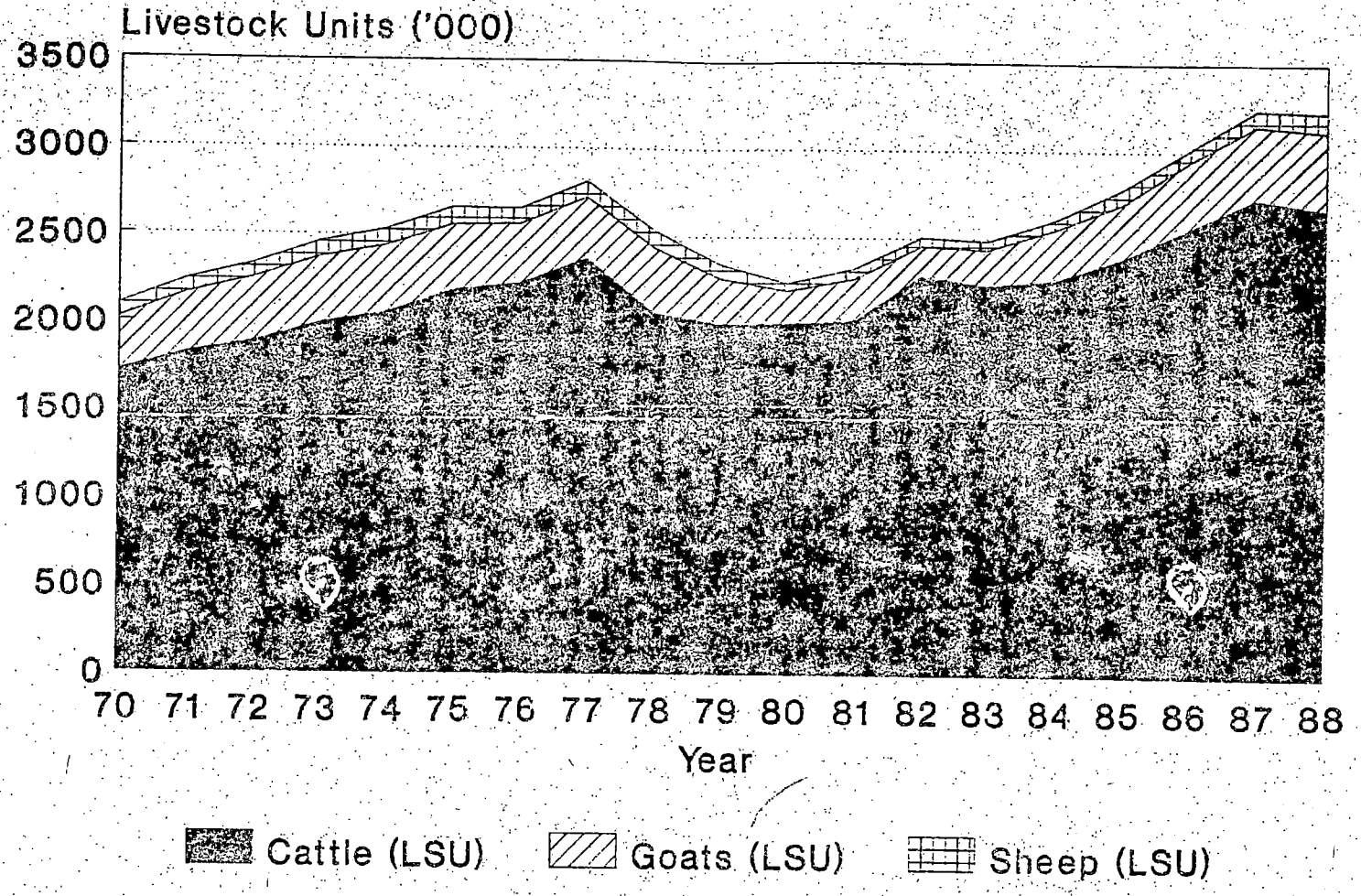
To a large extent the regional distribution of livestock is commensurate with available land. For instance natural region (NR) IV which accounts for 44.7% of communal lands is the location for 35-45% of all livestock (table 2). Similarly, natural regions IV and V which together account for 73.9% of communal land area also account for 50-80% of all livestock. Drier, semi-arid areas are the location for goats, sheep and donkeys; while cattle are spread more evenly.

Table 2. Distribution of Livestock by Natural Region Zimbabwe March 1989

Natural Region	Cattle	Goats	Sheep	Pigs	Donkeys	Rabbits	Poultry
			% Distribution				
I	1.5	2.0	0.3	--	0.1	0.8	2.3
II	23.6	8.1	8.7	35.4	1.0	41.4	23.6
III	22.5	18.5	15.7	5.6	14.8	25.7	18.4
IV	39.8	41.1	33.2	45.7	45.1	26.3	40.1
V	12.5	30.3	42.1	13.3	39.0	5.8	15.7
Total	99.9	100.0	100.0	100.0	100.0	100.0	100.1

SOURCE: CSO, National Livestock Survey, 1988-89.

Figure 1. LIVESTOCK MASS IN COMMUNAL AREAS
Zimbabwe 1970 to 1988



LSU: Cattle=0.7; Goats=0.2; Sheep=0.2

Further analysis of this distribution affords important insight into the location and degree of overgrazing (Table 3). Based on the total livestock mass for cattle, goats and sheep, overstocking is apparent in natural regions III to V. It is particularly bad in NR IV where actual stocking rates are four times recommended levels. While the recommended stocking rates are somewhat low -- being based on ranch management practices -- even those who question them acknowledge that over-grazing has contributed to environmental degradation in the semi-arid areas (Scoones and Wilson, pp 34-44).

Table 3. Stocking Rates by Natural Region Zimbabwe Communal Areas, 1988-89

Natural Region	Grazing Land[a] ('000 ha)	Livestock Mass[b] LSU's	Stocking Rates (ha/LSU) Actual	Recommended
I	288.0	46386	6.2	3-4
II	2852.8	630109	4.5	3-4
III	1517.7	654298	2.3	5-6
IV	2267.3	1198734	1.9	8
V	2680.2	479079	5.6	12
Total	9606.0	3008606	3.2	--

[a] GFA, 1987
[b] Cattle = 0.7 LSU, Goats = 0.2 LSU, Sheep = 0.2 LSU

The pattern of increases for cattle numbers is examined in Table 4, for the period 1983-84 to 1988-89. While the greatest increase in relative terms is occurring in NR I, the absolute increase is greatest in NR's II, III and IV. Overgrazing in NR IV is thus becoming worse. Declining cattle numbers in NR V are attributable to a major drought in 1982-84 and a lesser drought in 1986-87, which took a severe toll on cattle numbers.

Table 4. Increases in Cattle Numbers by Natural Region Zimbabwe Communal Areas, 1983-84 and 1988-89

Natural Region	Number of Cattle 1983-84	1988-89	Increase	% Change
I	12039	53325	41286	+ 343%
II	653210	838983	185773	+ 28%
III	690871	799878	109007	+ 16%
IV	1247458	1414377	166919	+ 13%
V	483116	444377	(38733)	- 8%

SOURCES: 1988-89, CSO Survey
1983-84, CSO Survey, Taken from GFA (p 26)

As livestock ownership is not universal it is also necessary to consider the regional distribution of owners versus non-owners (see Appendix B, Table B-1). Slightly more than half of all households own cattle and goats (58.7% and 56% respectively) although there is considerable variation across natural regions. Cattle ownership is highest in NR III and lowest in NR I, while goat ownership is highest in NR V and lowest in NR II.

The gini coefficients presented in Table 5 below provide further evidence of the highly skewed patterns of ownership among communal farmers. Of the two main categories of livestock, cattle ownership exhibits a somewhat higher level of inequality, and wider regional differences as compared to goats.

Table 5. Gini Coefficients for Livestock Ownership Zimbabwe Communal Areas, 1988-89

Livestock	Natural Region				
	I	II	III	IV	V
Cattle	0.772	0.629	0.565	0.681	0.742
Goats	0.680	0.763	0.638	0.685	0.637

Patterns of ownership for grazing livestock depend on: the availability of grazing land -- as determined by the profitability of cropping, and population pressure; and income levels. Hence the lower incidence of livestock ownership in NR I reflects both the priority given to cropping in higher potential locations, and the high population pressure which severely limits the area of available grazing. Both the means and the incentive to own cattle appear to be strong in NR I nevertheless, as indicated by the rapid increase in numbers depicted in Table 4. The lower incidence of households with cattle in NR IV is offset by the large number of households which own goats, sheep and donkeys. Of the remaining categories of livestock, poultry are the most significant, being owned by more than 80% of households in all natural regions.

CATTLE

There is a growing consensus that cattle are valued by communal farmers as an intermediate input to crop production rather than as a direct source of cash income. Scoones and Wilson (p 30) conclude that draft and manure account for 50%-70% of the value of cattle production, followed by milk production, and sales and slaughter. These results are supported by contemporary studies which show that increased herd size is associated with significant increases in both crop areas and yields (GFA, p 84; Jackson, p.204). Although in NR's IV and V Jackson has shown that crop yields decline when herd size exceeds seven cattle. These insights motivate consideration of the distribution of cattle ownership in Table 6.

It is immediately apparent that there are many households without cattle, which places them at a severe disadvantage. With the exception of NR I the level of non-ownership increases as conditions become more arid. Natural region I is the exception to this trend, although those NR I farmers who do own cattle have larger than average herds. In general, the distribution of herd size across natural regions is fairly similar however, being noticeably skewed towards a herd size of less than ten with an average of 7-8.

Table 6. Distribution of Cattle Herd Size by Natural Region Zimbabwe Communal Areas 1988-89

Natural Region	Distribution of Herd Size						Average Herd Size	
	0	1-5	6-10	11-15	16-20	>20	*	**
	% Households							
I	66.7	9.3	11.1	5.6	5.6	1.9	3	10
II	35.6	32.5	19.2	6.7	3.5	2.5	5	7
III	27.2	32.0	26.5	7.4	4.0	2.9	5	7
IV	46.0	25.3	17.5	6.4	2.5	2.3	4	7
V	52.1	24.7	11.6	7.2	1.7	2.7	4	8

* All households
** Owners only

Jackson (1989, p 205) shows that the distribution of cattle ownership is closely associated with household income, ranging from an ownership rate of 70% in the top two income quintiles down to 22% in the bottom income quintile. Moreover he found a gradual shift in this distribution from 1980 to 1985, at the expense of lower income households. The top two income quintiles increased their share of the national herd by 16%-20%, while the bottom two quintiles experienced a 23-29% decline in the number of cattle owned. He correctly refrains from inferring the direction of causality in this relationship however, noting that income and cattle ownership are jointly determined.

Off-take rates are very low, the most recent estimate coming from a national survey across natural regions II to IV which reports a rate of 3.6% (MLARR, 1990). The small size of most herds (ten or less) is probably a major contributing factor to this characteristic. For instance, there is evidence that off-take rates only become positive when herd size reaches 9-12 cattle (GFA, p 78). On this basis less than 15% of households would be in a position to sell and/or slaughter cattle at rates which exceed the rate of natural increase, let alone the 18-23% off-take rates which characterise the large commercial herds (Table 6). The majority of cattle are sold rather than slaughtered (MLARR).

DRAFT ANIMALS AND EQUIPMENT

Access to draft animals is invariably cited as the major constraint to crop production among Zimbabwe's communal farmers. Thus the large number of households which don't own draft animals (Table 7) is disturbingly high. This is particularly serious in the drier natural regions IV and V where a short and erratic rainy season mean that timely cultivation has a major impact on crop production levels. This may explain the higher number of donkeys in these two natural regions, as a lower cost substitute for oxen. Indeed the 85% increase in the national donkey herd since 1984-85 is perhaps one of the most significant recent trends in the patterns of livestock ownership and use among communal farmers (Table A-1).

Table 7. Distribution of Draft Animals by Natural Region Zimbabwe Communal Areas 1988-89

Natural Region	Number of Draft Animals							Avge Number	
	0	1	2	3	4	5	>5	*	**
	% Households								
	Draft Cattle								
I	63.0	0.0	31.5	0.0	3.7	1.9	0.0	1	2
II	44.3	7.8	21.3	5.3	14.8	2.3	4.3	2	3
III	37.0	8.2	18.3	4.7	23.3	0.4	8.2	2	3
IV	51.2	4.3	19.6	5.4	11.7	3.4	4.5	2	3
V	62.2	2.4	9.2	4.8	13.6	2.0	5.8	1	4
	Donkeys								
I	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
II	99.2	0.0	0.2	0.2	0.4	0.0	0.0	0	3
III	91.4	0.8	3.9	1.2	2.3	0.0	0.4	0	3
IV	86.5	1.8	4.7	2.0	3.1	0.9	0.9	0	3
V	70.1	4.1	6.5	3.7	8.8	1.7	5.1	1	4

* All households
** Owners only

Ownership per se does not resolve all of the issues involving the optimum draft input to crop production. Less than one third of all households have four or more oxen, the complement regarded as optimal for timely, effective cultivation. Thus the vast majority of households need to share draft animals to some extent, with the attendant losses of efficiency this entails. This deficiency is most apparent in NR I.

Fortunately ownership is not the only means to acquire access to draft animals (see Muchena, 1989), as suggested by Table 8 below which shows that many more households own ox-ploughs than own oxen. The alternative means of draft animal acquisition invariably incur a significant cost to the non-owner however. At its most extreme this cost may take the form of a

rental payment or a pledge of labour to the owner, but even where there is no direct cost the inability to plough at optimum times constitutes a significant indirect cost.

Table 8. Ownership of Oxen versus Ownership of Ox-Ploughs Zimbabwe Communal Areas 1988-89

Natural Region	Owners of Oxen	Owners of Ox-Ploughs
	% of Households	
I	37	50
II	56	62
III	63	75
IV	49	63
V	38	65

SMALL RUMINANTS

Small ruminants contribute to household welfare through cash income from sales, and through slaughter for feasts and own consumption. They are important for meeting large annual expenses such as school fees, and for intermittent cash and slaughter for births, marriages and funerals (GFA pp 70-76). In the event of drought they are also an important form of buffer capital as their numbers can be quickly restored.

Most small ruminants (70%-75%) are found in natural regions IV and V (Table 9). Goats are the most important, both in total numbers and because they are owned by a high 37-73% of all households. Their dominance probably reflects the suitability of natural regions IV and V for browsing rather than grazing. Only 2-11% of households own sheep and average flock size among owners is much smaller at 3-5, compared to 5-15 for goats.

Off-take rates are high, averaging 16% for goats and 10% for sheep (MLARR). Most are slaughtered for own consumption. Of those that are sold approximately 60% are sold through the Small Stock Buying scheme initiated by the Cold Storage Commission (CSC). This scheme was initiated in 1986 to provide communal farmers with a more effective market outlet for small ruminants. Total CSC purchases have increased from 58185 head in 1987 to 66176 head in 1989, of which approximately 85% are goats (CSC, 1989).

The higher overall off-take levels are facilitated by the higher reproductive performance of small ruminants, and their lower replacement cost. Together these factors allow flock size to be increased or reduced far more readily than cattle, without a serious reduction in household capital. For instance goat numbers have been found to return very quickly to a fairly stable ratio of 1.1 to 1 head of cattle, even after major reductions resulting from droughts, marriages etc (GFA p 62).

Table 9. Distribution of Sheep and Goats by Natural Region Zimbabwe 1988-89

Natural Region	% Distribution of Flock Size						Average Flock Size	
	0	1-5	6-10	11-15	16-20	>20	*	**
				Goats				
I	45.3	18.9	22.6	9.4	0.0	3.8	5	9
II	63.0	24.3	10.4	1.9	0.2	0.2	2	5
III	33.2	38.7	13.7	7.0	3.3	4.1	5	7
IV	41.5	28.3	16.3	5.4	4.1	4.3	5	8
V	26.9	22.8	17.9	12.1	4.8	15.5	11	15
				Sheep				
I	98.1	1.9	0.0	0.0	0.0	0.0	0	3
II	97.3	1.5	1.3	0.0	0.0	0.0	0	5
III	94.1	4.0	1.1	0.7	0.0	0.0	0	5
IV	94.6	4.1	0.9	0.2	0.2	0.0	0	5
V	88.7	5.2	3.8	0.7	0.0	1.7	1	9

* All households
** Owners only

POULTRY, PIGS AND RABBITS

Poultry are the most widely held category of livestock, being owned by 82%-89% of all communal households. Thirty-five to forty-five percent of families own flocks of 1-10 birds, and a further 25%-35% of families own flocks of 11-20 birds. Average flock size is 12-13 birds in all regions except NR II which has the lowest proportion of owners (80%) but the largest average flock size (17 birds).

Pigs are owned by less than 10% of communal households, being most prevalent in NR's II and IV which account for 35% and 45% of all pigs owned, respectively. Average herd size is very small, ranging from 2-4, with less than 15% of households owning herds of more than 5 pigs. Off-take rates range from 22-33% (MLARR), with most being slaughtered.

Rabbits are the least important of the minor livestock types, being owned by less than 5% of all communal households. Natural region II accounts for 41% of all rabbits and also has the largest average flock size (8 rabbits). Natural regions III and IV account for a further 52% of all rabbits with average flock sizes of 5-6 rabbits.

SUMMARY

Communal farmers are the major livestock owners in Zimbabwe, and their share of the nation's livestock is steadily increasing. This upward trend is contributing to two serious economic problems: the shortage of beef for domestic consumption, and the environmental degradation of the communal areas.

Over 55% of all households own cattle and goats, these being the most important livestock categories in terms of both their numbers and their contribution to household welfare. Most livestock are in the semi-arid NR's IV and V. Natural region IV is also the location of the worst over-grazing, a situation which is becoming worse rather than better as livestock numbers -- particularly cattle -- continue to increase.

Cattle are valued principally for their input to crop production, although only 37-56% of households own draft oxen, and an even lower 15% have the desired complement of four oxen. Worse still levels of draft ownership are lowest in NR's IV and V where erratic rainfall patterns mean that timely and effective cultivation has a very high pay-off. This latter shortage may be the rationale for the high and growing number of donkeys in NR's IV and V. The emphasis on owning cattle for draft purposes, and the small average herd size (only 15% of herds are greater than 10 cattle) are viewed as major determinants of the very low observed off-take rates.

Small ruminants are most important in NR's IV and V, the location of 70-75% of all goats and sheep. Goats are by far the most important of the two -- both in total and because they are owned by more households. Only 2-11% of households own sheep. Off-take rates for small ruminants are much higher than for cattle, most of this off-take being used for slaughter.

Of the remaining livestock poultry are the most widely held of all animals, being owned by more than 80% of all households. Pigs and rabbits are much less important. Less than 10% of households own pigs, most of these being in NR's II and IV -- and average herd size is very small (2-4 pigs). Rabbits are owned by less than 5% of households, being most important in NR's II, III and IV.

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APPENDIX 1 -- GENERAL INFORMATION

Table A-1. Communal Area Livestock, Zimbabwe 1970 to 1987

Year	Cattle	Goats	Sheep	Pigs	Donkeys
		Thousands			
1970	2 451	1 504	387	99	
1971	2 600	1 689	392	101	
1972	2 691	1 813	403	90	
1973	2 847	1 877	444	94	
1974	2 936	1 909	466	89	
1975	3 123	1 872	494	96	
1976	3 183	1 694	440	85	
1977	3 388	1 748	451	99	
1978	2 950	1 872	494	96	
1979	2 860	1 300	400	na	
1980	2 869	935	214	39	--
1981	2 895	1 203	297	84	--
1982	3 262	862	248	77	--
1983	3 189	1 024	245	76	--
1984	3 234	1 445	267	97	229
1985	3 409	1 564	422	92	278
1986	3 657	1 916	343	121	314
1987	3 905	2 090	447	120	308

SOURCE: Quarterly Digest of Statistics, March 1989.

- Data not available

Table A-2. Communal Farm Population and Area by Natural Region

Item	Natural Region					
	1	2a	2b	3	4	5
Population %	2.0	11.7	10.5	18.9	42.9	14.0
Land %	0.6	5.4	8.4	13.7	50.8	21.5

SOURCE: Stack, 1991.

Table A-3. Communal Farm Population and Area by Province

Province	Population	Area (km^2)
Manicaland	904 700	19 600
Mashonaland Central	422 500	16 000
Mashonaland East	578 000	13 800
Mashonaland West	346 300	13 200
Masvingo	1 017 700	21 900
Matabeleland South	472 500	24 100
Matabeleland North	394 800	29 600
Midlands	935 400	26 800
Total	5 071 900	165 000

SOURCE: Ministry Lands, Agriculture and Rural Resettlement, 1989

APPENDIX B -- ANALYSIS BY NATURAL REGION

Table B-1. Distribution of Owner Households by Natural Region Zimbabwe Communal Areas, March 1989

Natural Region	Cattle	Goats	Sheep	Donkeys	Pigs	Poultry	Rabbits
	% Owner Households						
I	33.3	54.7	1.9	1.9	--	88.7	1.9
II	64.4	37.0	2.7	0.2	8.5	80.8	4.4
III	72.8	66.8	5.9	9.9	2.9	82.7	3.7
IV	54.0	58.5	5.4	14.0	5.2	81.7	2.0
V	47.9	73.1	11.3	31.5	7.5	84.6	1.4
Total	58.7	56.0	5.7	11.9	6.1	82.4	2.9

Table B-2. Ownership of Ox-Ploughs by Natural Region Zimbabwe Communal Areas 1988-89

Natural Region	Number of Ox-ploughs						Average Number	
	0	1	2	3	4	>4	*	**
	% of Households							
I	50.0	40.7	9.3	0.0	0.0	0.0	0.59	1.19
II	38.5	52.0	7.6	1.4	0.2	0.2	0.74	1.20
III	24.9	63.8	9.7	1.2	0.0	0.4	0.89	1.18
IV	37.1	50.6	10.1	1.3	0.4	0.4	0.80	1.27
V	35.0	56.5	6.8	1.4	0.0	0.3	0.76	1.17

* All households
** Owners only

Table B-3. Distribution of Donkey Herd Size by Natural Region Zimbabwe Communal Areas 1988-89

Natural Region	Herd Size				Avge Herd Size	
	0	1-5	6-10	>10	*	**
	% Households					
I	98.1	1.9	0.0	0.0	0	2
II	99.8	0.2	0.0	0.0	0	3
III	90.1	7.0	2.9	0.0	0	4
IV	86.0	11.3	2.5	0.2	1	4
V	68.8	22.3	6.8	2.1	2	5

* All Households
** Owners Only

Table B-4. Distribution of Pig Herd Size by Natural Region Zimbabwe Communal Areas 1988-89

Natural Region	Herd Size				Avge Herd Size	
	0	1-5	6-10	>10	*	**
	% Households					
I	100.0	0.0	0.0	0.0	0	0
II	91.5	7.2	0.8	0.4	0	4
III	97.1	2.6	0.4	0.0	0	2
IV	94.8	4.1	0.9	0.2	0	4
V	92.5	6.8	0.3	0.3	0	2

* All households
** Owners only

Table B-5. Distribution of Poultry Flock Size by Natural Region
Zimbabwe Communal Areas 1988-89

Natural Region	Flock Size							Av Flock Size	
	0	1-10	11-20	21-30	31-40	41-50	>50	*	**
	% Households								
I	11.3	43.4	34.0	3.8	7.5	0.0	0.0	12	13
II	19.2	47.4	22.4	6.1	1.5	1.9	1.5	11	17
III	17.3	48.5	26.1	4.4	2.6	0.4	0.7	10	12
IV	18.3	46.4	25.3	7.0	1.8	0.7	0.5	10	12
V	15.4	37.3	30.8	11.6	3.1	0.7	1.0	12	14

* All households
** Owners only

Table B-6. Distribution of Rabbit Flock Size by Natural Region
Zimbabwe Communal Areas 1988-89

Natural Region	Flock Size				Avge Flock Size	
	0	1-5	6-10	>10	*	**
	% Households					
I	98.1	1.9	0.0	0.0	0	4
II	95.6	2.1	1.3	1.1	0	8
III	96.3	2.2	0.4	1.1	0	6
IV	98.0	1.6	0.0	0.5	0	5
V	98.6	1.0	0.0	0.3	0	6

* All households
** Owners only

APPENDIX C -- ANALYSIS BY PROVINCE

Table C-1: Distribution of Livestock by Province
Zimbabwe Communal Areas, March 1989

Province	Cattle	Goats	Sheep	Pigs	Donkeys	Rabbits	Poultry
			% Households				
Manicaland	15.8	15.4	15.5	15.8	3.7	18.4	19.3
Mash Cen	8.1	2.9	5.5	17.7	0.4	4.0	8.8
Mash East	11.9	5.5	4.8	13.6	1.3	20.2	10.8
Mash West	9.0	2.6	3.4	13.5	--	16.0	6.1
Matab N.	8.3	9.7	5.8	7.2	12.8	--	7.9
Matab S.	8.3	26.1	37.2	13.5	41.2	--	9.7
Midlands	19.8	22.4	15.6	4.2	27.6	21.8	18.9
Masvingo	18.9	15.5	12.1	14.5	13.1	19.5	18.5
Total	100.1	100.1	99.9	100.1	100.1	99.9	100.0

Table C-2. Households Owning Livestock by Province
Zimbabwe Communal Areas, March 1989

Province	Cattle	Goats	Sheep	Pigs	Donkeys	Rabbits	Poultry
			% Households				
Manicaland	54.1	59.5	4.5	6.3	1.4	2.7	86.5
Mash Cen	62.0	37.8	5.0	8.9	0.6	2.2	83.3
Mash East	56.9	37.0	1.6	7.9	0.5	4.2	70.7
Mash West	71.1	41.3	4.3	8.7	--	5.8	79.0
Matab N	47.1	62.4	3.8	3.8	19.7	--	81.5
Matab S	48.4	78.1	16.3	10.5	43.8	--	88.2
Midlands	69.1	68.0	4.3	1.3	22.1	3.5	87.0
Masvingo	59.1	59.6	6.9	4.2	10.8	4.2	81.5
Total	58.7	56.0	5.7	6.1	11.9	2.9	82.4

Table C-3. Gini Coefficients for Livestock Ownership
Zimbabwe Communal Areas, March 1989

	Manica land	Mash Cen	Mash East	Mash West	Matab North	Matab South	Mid- lands	Mas- ingo
Cattle	0.665	0.671	0.658	0.564	0.725	0.733	0.584	0.667
Goats	0.651	0.781	0.750	0.762	0.635	0.603	0.653	0.643

Table C-4. Distribution of Cattle Herd Size by Province
Zimbabwe Communal Areas 1988-89

Province	Herd Size						Av. Herd Size	
	0	1-5	6-10	11-15	16-20	>20	*	**
	% Households							
Manicaland	45.9	27.9	18.0	4.1	2.7	1.4	4	7
Mash Cen	38.0	35.8	11.7	7.3	3.9	3.4	4	7
Mash East	43.1	26.2	19.3	6.4	3.0	2.0	4	7
Mash West	28.9	31.9	25.2	8.1	3.7	2.2	6	8
Matab N.	52.9	17.2	15.9	5.7	3.8	4.5	5	10
Matab S.	51.6	21.6	11.8	11.1	1.3	2.6	4	8
Midlands	30.9	30.9	23.5	9.1	2.6	3.0	5	7
Masvingo	40.9	30.1	19.3	4.2	3.5	1.9	4	7

* All households
** Owners only

Table C-5. Distribution of Donkey Herd Size by Province
Zimbabwe Communal Areas 1988-89

Province	Herd Size				Av. Herd Size	
	0	1-5	6-10	>10	*	**
	% Households					
Manicaland	98.6	0.9	0.5	0.0	0	4
Mash Cen	99.4	0.6	0.0	0.0	0	4
Mash East	99.5	0.5	0.0	0.0	0	3
Mash West	100.0	0.0	0.0	0.0	--	--
Matab N.	80.3	15.3	3.8	0.6	1	4
Matab S.	56.2	28.1	11.8	3.9	2	6
Midlands	77.9	17.7	4.3	0.0	1	4
Masvingo	89.2	9.2	1.5	0.0	0	3

* All households
** Owners only

Table C-6. Ownership of Draft Cattle by Province
Zimbabwe Communal Areas 1988-89

Province	Number of Draft Cattle							Av. # Draft	
	0	1	2	3	4	5	>5	*	**
	% Households								
Manicaland	53.2	5.5	26.6	3.2	8.7	0.9	1.8	1	3
Mash Cen	41.1	5.6	22.4	8.9	15.6	2.2	4.4	2	3
Mash East	50.2	6.0	17.7	5.1	14.9	2.8	3.3	2	3
Mash West	38.2	10.7	18.3	3.1	17.6	0.8	11.5	2	3
Matab N.	60.4	0.6	15.7	4.4	15.7	0.6	2.5	1	3
Matab S.	69.5	1.9	13.6	3.2	10.4	0.6	0.6	1	3
Midlands	37.8	7.2	16.7	4.5	22.1	2.3	9.5	2	4
Masvingo	46.7	6.2	15.1	6.2	13.1	5.4	7.3	2	4

* All households
** Owners only

Table C-7. Ownership of Draft Donkeys by Province
Zimbabwe Communal Areas 1988-89

Province	Number of Draft Donkeys							Av. # Draft	
	0	1	2	3	4	5	>5	*	**
	% Households								
Manicaland	99.5	0.0	0.0	0.5	0.0	0.0	0.0	0	3
Mash Cen	99.4	0.0	0.0	0.6	0.0	0.0	0.0	0	3
Mash East	98.6	0.0	0.9	0.5	0.0	0.0	0.0	0	3
Mash West	99.2	0.0	0.0	0.8	0.0	0.0	0.0	0	4
Matab N	76.1	4.4	6.3	3.1	6.3	1.9	1.9	1	3
Matab S	57.8	3.9	9.7	5.2	11.7	2.6	9.1	2	4
Midlands	82.4	2.3	6.8	2.3	4.5	0.9	0.9	1	3
Masvingo	90.0	1.5	3.5	1.5	3.1	0.0	0.4	0	3

* All households
** Owners only

Table C-8. Ownership of Ox-Ploughs by Province
Zimbabwe Communal Areas 1988-89

Province	Number of Ox-ploughs						Av. # Ploughs	
	0	1	2	3	4	>4	*	**
	% Households							
Manicaland	40.8	50.0	8.3	0.9	0.0	0.0	0.69	1.17
Mash Cen.	33.9	52.2	12.2	1.1	0.6	0.0	0.82	1.24
Mash East	44.7	47.9	5.6	1.4	0.0	0.5	0.66	1.19
Mash West	29.0	59.5	10.7	0.8	0.0	0.0	0.83	1.17
Matab N.	46.5	42.1	7.5	1.9	0.6	1.3	0.74	1.39
Matab S.	27.9	64.9	5.8	1.3	0.0	0.0	0.81	1.12
Midlands	21.2	62.6	14.0	1.8	0.0	0.5	0.98	1.25
Masving.	38.2	54.4	5.4	1.2	0.4	0.4	0.72	1.17

* All households
** Owners only

Table C-9. Distribution of Goat Flock Size by Province
Zimbabwe Communal Areas 1988-89

Province	Flock Size						Av. Flock Size	
	0	1-5	6-10	11-15	16-20	>20	*	**
	% Households							
Manicaland	40.5	31.5	19.8	5.0	0.5	2.7	4	7
Mash Cen	62.2	27.2	6.7	2.8	0.6	0.6	2	5
Mash East	63.0	22.2	10.6	3.2	1.1	0.0	2	6
Mash West	58.7	29.0	9.4	1.4	0.7	0.7	2	5
Matab N.	37.6	22.9	17.8	10.8	5.1	5.7	6	10
Matab S.	21.9	17.9	15.9	11.3	7.3	25.8	15	19
Midlands	32.0	32.5	14.3	8.7	4.8	7.8	7	10
Masvingo	40.4	31.5	18.5	5.4	2.7	1.5	4	7

* All households
** Owners only

Table C-10. Distribution of Sheep Flock Size by Province Zimbabwe Communal Areas 1988-89

Province	Flock Size						Av. Flock Size	
	0	1-5	6-10	11-15	16-20	>20	*	**
	% Households							
Manicaland	95.5	2.7	0.9	0.5	0.5	0.0	0	6
Mash Cen	95.0	3.3	1.7	0.0	0.0	0.0	0	5
Mash East	98.4	0.0	1.6	0.0	0.0	0.0	0	8
Mash West	95.7	2.9	1.4	0.0	0.0	0.0	0	4
Matab N.	96.2	1.9	1.3	0.6	0.0	0.0	0	7
Matab S.	83.7	6.5	6.5	1.3	0.0	2.0	1	9
Midlands	95.7	2.6	0.9	0.0	0.0	0.9	0	7
Masvingo	93.1	6.5	0.0	0.4	0.0	0.0	0	3

* All households
** Owners only

Table C-11. Distribution of Pig Herd Size by Province Zimbabwe Communal Areas 1988-89

Province	Herd Size				Avge Herd Size	
	0	1-5	6-10	>10	*	**
	% Households					
Manicaland	93.7	5.9	0.5	0.0	0	2
Mash Cen	91.1	6.7	1.7	0.6	0	4
Mash East	92.1	7.9	0.0	0.0	0	2
Mash West	91.3	6.5	1.4	0.7	0	4
Matab N.	96.2	2.5	1.3	0.0	0	5
Matab S.	89.5	9.2	0.7	0.7	0	3
Midlands	98.7	0.9	0.4	0.0	0	3
Masvingo	95.8	3.8	0.0	0.4	0	3

* All households
** Owners only

Table C-12: Distribution of Poultry by Flock Size
Zimbabwe Communal Areas 1989

Province	Poultry Flock Size							Av Flock Size	
	0	1-10	11-20	21-30	31-40	41-50	>50	*	**
	% Households								
Manicaland	13.5	44.6	31.5	5.0	2.7	2.3	0.5	11	13
Mash Cen	16.7	58.3	18.9	1.7	1.7	1.7	1.1	12	14
Mash East	29.3	40.8	18.3	7.3	1.6	1.0	1.6	9	13
Mash West	21.0	46.4	21.7	8.0	1.4	0.7	0.7	10	12
Matab N	18.5	40.1	28.0	9.6	2.5	0.6	0.6	11	13
Matab S	11.8	39.9	33.3	10.5	2.7	2.3	0.0	12	13
Midlands	13.0	48.5	26.0	7.4	4.3	0.0	0.9	12	14
Masvingo	18.5	42.7	28.1	8.1	0.8	0.4	1.5	10	13

* All households
** Owners only

Table C-13. Distribution of Rabbit Flock Size by Province
Zimbabwe Communal Areas 1988-89

Province	Flock Size				Avge Flock Size	
	0	1-5	6-10	>10	*	**
	% Households					
Manicaland	97.3	1.4	0.9	0.5	0	7
Mash Cen	97.8	1.1	1.1	0.0	0	5
Mash East	95.8	2.6	0.5	1.0	0	7
Mash West	94.2	2.9	0.7	2.2	0	8
Matab N.	100.0	0.0	0.0	0.0	--	--
Matab S.	100.0	0.0	0.0	0.0	--	--
Midlands	96.5	1.7	0.4	1.3	0	8
Masvingo	95.8	3.5	0.0	0.8	0	5

* All households
** Owners only